

**SIXTH REPORT**  
ON THE  
**SANITARY CONDITION**

OF THE  
**Urban District**

OF  
**RICKMANSWORTH,**

FOR THE YEAR ENDED DECEMBER 31ST, 1903.

BY  
**MARK SHARMAN,**

D.P.H. Scot.,

*Medical Officer of Health.*

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1904.

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To

THE RICKMANSWORTH URBAN DISTRICT COUNCIL.

GENTLEMEN,

I have the pleasure of presenting to you my sixth Annual Report.

In compliance with the wishes of the County Medical Officer of Health for Hertfordshire I have re-arranged the headings of this Report to facilitate its incorporation into the Report for the County.

I am,

Your obedient Servant,

MARK SHARMAN,

Medical Officer of Health.

RICKMANSWORTH,

*10th May, 1904.*

## REPORT.

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THE RICKMANSWORTH URBAN DISTRICT began its existence in April, 1898. It has been carved out of the old Civil Parish of Rickmansworth, which was one of the Parishes of the Watford Rural District.

The Urban District consists of the Town of Rickmansworth, the Hamlet of Batchworth, and the most populous parts of the Villages of Croxley Green and Mill End.

For the purposes of this Report, the District is divided into three localities, viz :—(1) Rickmansworth—including Batchworth, (2) Croxley Green, and (3) Mill End.

Rickmansworth is separated from Croxley Green on its East side by the River Chess, and from Mill End on the West side by the Old Belfry Lane, which runs into the Uxbridge Road opposite the “Half-Way-House” Inn, and by an imaginary line continued across to the Southern border of the District.

The part of Croxley Green included in the District, begins on the Eastern side of the junction of the Watford Road with Croxley New Road, and embraces the whole of the latter Road, Scots Hill, and part of the Copthorne Estate. The District then narrows into an irregular strip comprising the Town and Batchworth (Moor Park and Batchworth Park being excluded). It then widens out so as to include the Cemetery and the

Cottages known as Bankside Downs on the North-West. From Rickmansworth the District extends on either side of the Uxbridge Road as far as Long Lane, including St. Peter's Vicarage, and the Pumping Station of the Rickmansworth and Uxbridge Valley Water Company at Drayton Ford, and, of course, the thickly populated part of the Village of Mill End.

STATISTICS.—(see Tables I, II & IV.)—The Rickmansworth Urban District contained a population by census in 1901 of 5,627 persons; the number estimated to the middle of 1903 is 6,155. The District comprises an area of 572 acres (of which 16 acres are water). The number of inhabited houses for 1903 is 1,231, giving an average density of population per house of 5 persons. The average number of persons per acre of dry land in the District is 11·07.

During the year 1903 sixty-one deaths have been registered in the Urban District of Rickmansworth, to which must be added for statistical purposes six deaths which took place in Watford Union Infirmary, three deaths in the Isolation Hospital (one from Diphtheria, one from Scarlet Fever, and one from Typhoid or Enteric Fever) and one death in the Watford District Hospital. Including all cases the death-rate for the year is 11·5 per thousand persons living. It will be noted that the death-rate is a marked improvement upon that of last year.

The age distribution was as follows:—

Under one year	...	...	...	19
At one year and under five	...	...	...	5
„ five years	„	fifteen	...	4
„ fifteen	„	twenty-five	...	6
„ twenty-five	„	sixty-five	...	26
„ sixty-five and upwards	...	...	...	11

It will be seen that 26·7% of the registered deaths occurred in children under one year of age and 15·5% of persons over 65 years of age.

The deaths occurring in the three localities into which the District is divided for the purposes of this Report were as follows :—

Rickmansworth	...	...	...	36
Croxley Green	...	...	...	20
Mill End	...	...	...	15
The “yearly” death-rate per thousand being:—				
Rickmansworth	...	...	...	11·1
Croxley Green	...	...	...	10·1
Mill End	...	...	...	15·7

It will be observed from the above figures that Mill End again has the highest “annual death-rate” of the three localities which the Urban District contains. The “annual death-rate” of a place is very fair evidence of the sanitary condition of such place. On turning to the Annual Report of the County Medical Officer of Health for last year we find that Mill End far exceeds the average and the actual annual death-rates of the Urban Districts in the County. Further notice will be taken of this question at a later stage in this Report.

BIRTHS.—There were 168 births registered, giving the “yearly” birth-rate for the District as 27·3 per thousand, of these 77 were females and 91 males.

Taking the births in the three localities, the figures are:—

		Females.	Males.	Total.
Rickmansworth	...	43	44	87
Croxley Green	...	25	33	58
Mill End	...	9	14	23
		—	—	—
Totals	...	77	91	168
		—	—	—

The “yearly” birth-rate being respectively 26·9, 29·3 and 24·2 per thousand, whilst the average birth-rate for England is about 30 per thousand. It is satisfactory to note that among the



registered births for the year there were only two illegitimate births, one at Rickmansworth, and one at Mill End, as against five for the year 1902.

It is gratifying to record that during the year under supervision the birth-rate has increased. It is to be hoped that other Districts throughout the County will be able to show a similar improvement in this direction. The "birth-rate question" is one of national importance as was pointed out in last year's Report.

INFANTILE MORTALITY.—The deaths of infants under one year were in the proportion of 113·1 to a thousand registered births for the whole District. Dividing up the District into the various localities, the rates of infantile mortality are :—

Rickmansworth	...	...	...	91·9
Croxley Green	...	...	...	103·4
Mill End	...	...	...	185·1

It will be seen that in the locality of Mill End the infant mortality stands very high, exceeding that of 1902. Infant mortality is of great importance in dealing with the subject of the Public Health. This death-rate is quite distinct from the general "annual death-rate"; it may be high where the latter is low, or low where the general "annual death-rate" is high. Deaths from Diarrhœa are a fruitful source of mortality amongst infants. As regards the locality of Mill End only one death from Diarrhœa occurred during the current year and none during 1902.

It is therefore necessary to re-state the facts already set forth in last year's Report in order that the high rate in Mill End may be explained. In Mill End five deaths of children under one year of age have occurred during the year 1903, one death was caused by Whooping Cough, the other deaths resulted from causes directly or indirectly connected with probably improper feeding or from parental mismanagement of children.

The County Council of Hertfordshire are to be congratulated upon the action they have taken through their Medical Officer of Health in drawing up, printing and distributing cards entitled "Hints on the feeding and care of Infants." If the infant mortality rate is to be lowered, success is to be attained by the education of the people.

PHYSICAL FEATURES.—Geologically the subsoil of the District is gravel upon chalk, Rickmansworth District being on the extensive tracks of gravel lying between St. Albans and Beaconsfield. The gravel is mostly from a few feet to 25 feet in thickness, seldom more; it varies in character from pebble gravel or shingle (largely made up of flint and quartz pebbles) to coarser gravel and sand. The chalk of part of the Northern margin of the "London Basin" comes to the surface in the Rickmansworth District. It is interesting to further refer to the more superficial geology of the District as brought to light by the excavations rendered necessary in carrying out the Sewerage Scheme; these remarks more particularly apply to the lower-lying localities of Rickmansworth and Mill End. The last mentioned localities are probably placed upon the site of an ancient river bed, and later a marsh which has produced the so-called "drift" frequently met with in low-lying districts generally. This "drift" is both alluvial and diluvial in character, and is composed of patches—varying in size—of shingle, clay, gravel, sand and peat, mixed up in the most heterogeneous fashion. The true shingle is the lowest and water-bearing stratum lying just above the chalk formation. The true "gravel upon chalk" layer gradually increases as the gradients of the District rise, and finally predominates in the elevated parts.

The elevation of the District varies from about 250 feet above sea-level at its highest point in Croxley Green to rather less than 150 at Batchworth and Mill End, the general fall taking place through Mill End to its most Western boundary.

The District is drained through the Chess, the Colne, and the tributaries of the latter. Water in many of the low-lying places is found at from 2 to 4 feet below the surface.

INFECTIOUS DISEASES.—The seven principal Zymotic diseases caused eight registered deaths. The “yearly” Zymotic death-rate was 1·29 per thousand.

Small Pox	...	...	...	..	...	0
Measles	...	...	...	...	...	0
Scarlet Fever	...	...	...	...	...	1
Diphtheria and Membranous Croup					...	1
Whooping Cough	...	...	...	...	...	1
Fevers	{	Typhus	...	...	...	0
		Enteric	...	...	...	2
		Other or Doubtful		...	...	0
Diarrhœa	...	...	...	....	...	3
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ISOLATION HOSPITAL.—The District is well provided for in this direction, the Watford Joint Hospital Board giving every facility for the removal and care of infectious cases. The Council is to be congratulated upon having an Isolation Hospital so near at hand for dealing with infectious diseases. The staff of the Hospital thoroughly deserve the confidence and thanks of the Urban Council for their hearty co-operation in preventing and dealing with the spread of notifiable diseases in the Rickmansworth Urban District. Forty cases have been removed to the Hospital during the year.

When the extension of the Hospital referred to in last year's Annual Report is completed twenty-four additional beds will be provided, as well as improvements and alterations in the administrative block.



DISINFECTION.—Bedding and such other articles as cannot be safely and efficiently disinfected at the patients' homes are removed by the Isolation Hospital Authority and dealt with by means of the Steam Disinfector, and then returned to the houses of the owners.

The Medical Officer of Health would remind the Council that this Disinfector is hardly sufficient for the work of the combined Districts and that not infrequently articles have been damaged in the process of disinfection, and the Council has on several occasions had to compensate the owners; this seems to be a matter which should receive the consideration of the Joint Hospital Board at an early date.

The Formalin Lamp and "Spray Disinfector" recently provided by the Urban Council still continue to give satisfaction.

BACTERIOLOGICAL ARRANGEMENTS. — At present medical practitioners in the District are at liberty to send "throat specimens" to either the Lister Institute or to the Laboratory of the Watford Joint Isolation Hospital, at the expense of the Council, in order that they may be examined bacterially for the presence of the *Bacillus Diphtheriæ*.

It is only just to note that medical practitioners in the District are still availing themselves regularly of the help conferred by the Council, with every advantage to their patients.

During the year 1903 forty-one investigations have been made of "throat specimens" of which sixteen showed the germs of Diphtheria.

EPIDEMIOLOGY (see Tables III. & IV.)—Since October, 1890, the District has been under the operation of the Infectious Diseases (Notification) Act, and during the period over which this Report extends 73 cases have been notified as follows:—

Small Pox	...	...	...	...	...	0
Chicken Pox	...	..	...	...	...	14
Diphtheria (and Membranous Croup)					...	27
Erysipelas	...	...	...	...	...	7
Scarlet Fever	...	...	...	...	...	19
Enteric or Typhoid Fever	...		...	...	...	5
Puerperal Fever	...	...	...	...	...	1
						<hr/> 73

This gives a Notifiable Sickness-rate of 11·8 per thousand of the population.

SMALL POX.—Small Pox has not been much in evidence during the present year. Rickmansworth has been quite free from the disease notwithstanding the occurrence of seven cases at Watford. The Medical Officer of Health for Watford Urban District deserves the thanks of the inhabitants of Rickmansworth for the prompt and efficient manner in which he dealt with these cases, thus preventing them from becoming a source of infection to the surrounding districts. The inhabitants of the District are to be warmly commended upon the manner in which they have availed and still avail themselves of the opportunities of being vaccinated or re-vaccinated afforded them by the District Authorities. This fact to a very great extent accounts, in the opinion of the Medical Officer of Health, for the immunity from this terrible disease, which the Urban District of Rickmansworth has enjoyed during recent years.

VACCINATION.—Five years' experience of the working of the Vaccination Acts of 1898 is now forthcoming, and the results are gratifying. In some Districts, amongst which Rickmansworth must be included, this is particularly so. There is no doubt that these results are largely due to the entire use of Calf Lymph and to "domiciliary" as distinguished from "stational" vaccination. The following figures speak for themselves.

<i>Year.</i>	<i>Primary Vaccinations.</i>	<i>Re-Vaccinations.</i>
1895	... 124	...
1896	... 88	...
1897	... 95	...
*1898	... 71	...
†1899	... 172	...
1900	... 144	... 3
1901	... 132	... 121
1902	... 142	... 783
1903	... 132	... 28

\* N.B.—The few cases of this year are undoubtedly partly due to Boards of Guardians and individuals waiting for the New Act.

† New Vaccination Act of 1898 in force.

Satisfactory infant vaccination must not lull the public into the belief that its effect is everlasting: re-vaccination is required at least once again in youth or early adult life.

It is a regrettable state of affairs that some parents should deliberately, in the face of all scientific knowledge and facts, neglect to protect their children against such a dreaded and loathsome disease as Small Pox.

During the coming year the Legislature will have to seriously face the question of Vaccination in all its aspects. It is to be hoped that some really satisfactory conclusion will be arrived at on this momentous question.

CHICKEN POX.—The Rickmansworth Urban District Council have been wise in the action which they have taken with regard to this disease. Chicken Pox or Varicella has been added to the list of Notifiable Diseases in force in the District. It is of the utmost importance that cases of Chicken Pox should be under supervision, especially during an epidemic of Small Pox. There is often difficulty in distinguishing a mild attack of Small Pox from the kindred disease Chicken Pox. Fourteen cases of this disease were notified.



MEASLES.—Although no death is recorded in the District as the result of Measles, the Medical Officer of Health would again take the opportunity of impressing upon the public the importance of not neglecting this disease, which, from being so constantly present among the community, and apparently in many cases trivial in its effects, parents and others are liable to ignore. The disease in the acute stage is seldom fatal, but from the neglect of the seemingly slight chest troubles following, serious and often fatal results may ensue.

The Urban District Council carefully considered the question of adding measles to the list of compulsory Notifiable Diseases; the Council came to the conclusion that at the present time the advantage to be gained by so doing would not counter-balance the trouble and expenditure necessitated in carrying out the Act. To be of value, notification of measles would need to be given early in the first cases. It is well known in dealing with this disease that those responsible for the care of children frequently do not call in the advice of a doctor unless some serious complication arises in the course of the illness; this state of affairs would require that if the notification of Measles is to be made useful, parents and guardians must notify the Sanitary Authority or run the risk of being proceeded against for not so doing. The amount expended on notification fees where measles is concerned is hardly likely to reach any serious figure in this District, at the same time it must not be lost sight of. One advantage of the compulsory notification of Measles might be that cases of Scarlet Fever and possibly Small Pox would not escape recognition. A disadvantage in making Measles notifiable is that the Local Government Board will not sanction the disease being added to the Schedule for less than five years, thus preventing any Sanitary Authority taking any really tentative action. Another point raised was that if Measles is to be included in the list of



notifiable diseases it must be treated as other notifiable diseases by isolation and disinfection.

SCARLET FEVER.—With regard to Scarlet Fever, it will be seen that nineteen cases have been notified for the year 1903 as against thirty-five during the previous year. Eight cases have come from Rickmansworth, eleven from Croxley Green, and none from Mill End.

It is to be noted with reference to Scarlet Fever that the Rickmansworth Urban District shows a marked improvement in the number of cases notified, notwithstanding considerable prevalence of the disease in surrounding districts. Several of the cases have proved to be of a severe type and unfortunately one child died as compared with no death from the disease during last year. Scarlet Fever is a disorder which shows a marked difference in the severity of the symptoms in different epidemics. The disease during recent years has usually manifested itself as a much milder illness than formerly. Experts in Public Health matters have been at a loss to account for this fact. It is not unreasonable to suggest that the general improvement in sanitation and the greater desire of the Public to live in better-built, better-drained, better-ventilated and better-lighted houses has made for this improved state of affairs. The Medical Officer of Health still holds the opinion that the dissemination of the disease is closely associated with the attendance at Elementary Schools of children suffering, or convalescent from a mild attack.

WHOOPIING COUGH.—As far as this disease is concerned the statements made with regard to Measles apply equally. One death was registered as occurring from Whooping Cough, the same figure as last year. It seems from the scanty information to be obtained that this disease has not been prevalent during the current year.

DIPHTHERIA.—Twenty-seven cases have been notified during the year 1903 as against seven cases last year. The cases notified were distributed as follows:—

		Rickmansworth.		Croxley Green.		Mill End.
January	...	1	...	0	...	0
February	...	0	...	0	...	0
March	...	0	...	0	...	0
April	...	1	...	3	...	0
May	...	1	...	0	...	0
June	..	0	...	1	...	0
July	...	1	...	0	...	0
August	...	3	...	0	...	0
September	..	0	...	0	..	0
October	...	14	...	0	...	0
November	...	0	...	0	...	0
December	...	0	...	2	...	0
		<hr/>		<hr/>		<hr/>
Totals	...	21		6		0

On examining the facts three points are noted : (1) No case of Diphtheria has been notified from Mill End, (2) All the cases except six were from the locality of Rickmansworth, (3) The sharp though fortunately limited epidemic from which the District suffered occurred during October, the wettest month recorded in this neighbourhood during the year. In the month of October 6·82 inches of rain fell ; damp is closely associated with Diphtheria. It is unnecessary to consider seriously the incidence of this disease during the other months as the cases were few, scattered and mild. The epidemic of October, although short, sharp, and limited to the locality of Rickmansworth, is interesting. Briefly the facts are as follows:—On October 19th, 2 cases notified ; October 20th, 2 cases ; 22nd, 3 cases ; 23rd, 3 cases ; 24th, 2 cases ; 25th, 1 case ; 29th, 1 case. Seven of the fourteen cases were distinctly severe,

with one death. As to the origin of the outbreak one common factor was discovered in eleven of the fourteen cases, viz., the same milk supply. All the severe cases were included in the former number. On October 20th notices were immediately printed and distributed amongst householders recommending them to boil all milk. On investigation a person closely associated with the handling of the milk under suspicion was found to have the germs of Diphtheria poison in his throat; he was suspended temporarily from dealing with this milk and placed under treatment. The epidemic promptly began to abate. The cows supplying the milk were carefully examined by a veterinary expert called in by the Council and found to be healthy. Sanitary defects of a more or less serious character were found in the houses from which the cases came; these were at once remedied. The Medical Officer of Health would again most strenuously urge upon the public the importance of immediately treating this disease with Antitoxin. In the small epidemic under notice the recoveries of some of the severe cases were undoubtedly due to the fact that Antitoxin was administered without delay, coupled with the good nursing at the Isolation Hospital. In concluding the remarks respecting Diphtheria it may not be out of place to quote the views of the County Medical Officer of Health in his Report of 1902. "It is a  
 "striking fact that in Rickmansworth, where Antitoxin is promptly  
 "and freely used and bacterial diagnosis is provided at the  
 "expense of the Council only seven cases should have occurred  
 "last year and these without a death."

The action of the Council in meeting promptly to deal with the outbreak should be appreciated by the inhabitants.

ENTERIC (TYPHOID) FEVER.—Five cases were notified during the year, two of which proved fatal, not a satisfactory record. However it is to be hoped that with the new Sewerage works in being, a better state of affairs may be looked for.



EPIDEMIC INFLUENZA.—No death has occurred during the current year. Three deaths were noted for last year as arising from this disease.

DIARRHŒA.—The number of deaths from Diarrhœa since 1898 are as follows :—

1898	...	...	...	eleven deaths
1899	...	...	...	six „
1900	...	...	...	four „
1901	...	...	...	one „
1902	...	...	...	none „
1903	...	...	...	three „

There is a rise for the year over which this Report extends giving a death-rate of .48 per thousand of the population. The disease in question is especially dangerous to children during the first year of life, the reason being that milk is, or should be, the staple article of diet during this period. Every precaution should therefore be taken to see that milk, in whatever form provided, is absolutely free from contamination of all kinds. The Inspector of Nuisances is to be commended on the care bestowed by him upon the street washing and the general scavenging of the District. It is a most important element in dealing with the disease under consideration.

PUERPERAL FEVER.—One case was notified during the year.

ERYSIPELAS.—Seven cases were notified for the year 1903. Fifteen were recorded during the year 1902. It is difficult to understand what advantages are gained by notifying these cases, when such diseases as Measles, Whooping Cough, Diarrhœa and Consumption, are omitted from the list of Notifiable Diseases.

TUBERCULOUS DISEASES (Including Phthisis or Consumption)  
—Thirteen deaths have occurred from these diseases during the year, three in Rickmansworth, six in Croxley Green, and four in



Mill End. This gives a “yearly” death-rate for these diseases of 2·1 per thousand for the whole District.

The death-rate from Phthisis alone is 1·7 per thousand.

The Medical Officer of Health would again urge upon the Council the advisability of taking steps to educate the inhabitants of the District how to avoid these most preventable of diseases, and how to treat Consumption in their own homes. According to present knowledge the treatment should be carried out upon common sense lines, which are more or less within the scope of everyone whether rich or poor. A knowledge of the cause and effects of the disease is of the utmost importance. Good feeding, fresh air and sunlight, are now known to be among the most valuable of preventatives.

CANCER.—With regard to Cancer, three deaths have been registered in the Urban District, two from the locality of Rickmansworth and one from Mill End. The death-rate from this disease is therefore ·47 per thousand living. The mean annual death-rate for England is ·63. There seem to be many reasons for considering this an infective disease and probably closely associated with insanitary conditions. It is a mistake to imagine that the disease is largely restricted to the low lying districts and valleys of this neighbourhood, and there is no valid reason to suppose, as some do, that Rickmansworth is more prone to Cancer than other places.

RAINFALL.—Through the courtesy of the Manager of the Rickmansworth and Uxbridge Valley Water Company the rainfall of the District as recorded at Drayton Ford is appended for the years 1902 and 1903, they afford an interesting comparison.

Rain Gauge.—Diameter of funnel 8 inches; height of top, above ground,  $1\frac{1}{4}$  foot; above sea level, 146 feet.

1902	Inches	1903	Inches
January ...	0·83	January ...	2·52
February ...	1·29	February ...	1·59
March ...	1·44	March ...	2·52
April ...	0·76	April ...	3·10
May ...	2·23	May ...	1·91
June ...	2·69	June ...	5·73
July ...	1·51	July ...	3·81
August ...	4·88	August ...	2·95
September ...	0·49	September ...	1·62
October ...	1·76	October ...	6·82
November ...	1·94	November ...	1·60
December ...	1·15	December ...	2·06
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Total	20·97	Total	36·23

WATER SUPPLY.—The District draws its water for drinking and domestic purposes from the Rickmansworth and Uxbridge Valley Water Company's mains, deep wells with or without pumps, and shallow wells, which are in some instances only 6 to 12 feet in depth.

The sources from which the inhabitants obtain their drinking water are certainly becoming purer, and the shallow wells are gradually becoming disused.

The Company's water—save for its hardness—is thoroughly good and absolutely free from organic pollution, and it seems a pity that more householders do not avail themselves of its use.

At the present time this state of affairs has been largely remedied, as evidenced by the statement to be found below concerning the number of new connections made during the last five years with the Uxbridge Valley Water Company's mains :—

1899, new connections made	...	...	105
1900.           "           "	...	...	78
1901,           "           "	...	...	78
1902,           "           "	...	...	90
1903,           "           "	...	...	51

Most of these are to new houses, but some of the older houses and cottages have been supplied with the Company's water owing to their well supply having been found impure.

No doubt during the coming year the number of connections with the Company's mains will be increased. A plentiful supply of water is always needed for flushing purposes to make a Drainage Scheme satisfactory and successful.

WATER ANALYSIS.—During the year twelve samples of water were sent for analysis, of which three were good, seven bad, and two doubtful. The closer supervision of the water supplies of the district has certainly produced satisfactory results.

The Medical Officer of Health has made an analysis of the water drawn from the Rickmansworth and Uxbridge Valley Water Company's main passing through the High Street, carrying water from the well at Batchworth, which is now being used by the Company until their new well at Batchworth Mill has been made, with the following result:—

Colour	...	...	...	good.
Odour	...	...	...	none.
Turbidity	...	...	...	none.
Sediment	...	...	..	slight white powder (chalk).
Microscopic Examination				nothing definite.
Residue on Examination	...			white (chalk).
Chlorine	...	...	...	1.27 grains per gallon.
Total hardness	...	...	16.0	„ „
Permanent hardness	...	...	3.5	„ „
Nitrites	...	...	...	absent.
Nitrates	...	...	...	a slight trace.
Oxygen absorbed	...	...	..95	parts per million.
Free Ammonia or Saline Ammonia	...	...	0.004	parts per million.
Albuminoid Ammonia or Organic Ammonia	...	...	0.003	parts per million.

The following remarks must be again emphasised this year as they have been in previous years. It is evident that this would be a really good, pure water if it were not so hard. The question of hardness is more to be looked at from a domestic than a hygienic point of view, in that it is not likely to cause any waterborne or zymotic disorder, but the amount of "chalk" that the consumers have to try to digest is certainly not good for their constitutions. Hard water is distinctly bad for kettles and boilers, necessitating their constant cleaning and repair, which if postponed is liable to cause danger to householders by the possible bursting of the boiler. Every boiler in this district should be cleaned, that is the incrustation of lime should be removed, at least once in every three months, if an effective heating of the water is desired. The crust which forms in boilers may be loose or hard, the former condition is the result of the deposit of salts, causing temporary hardness, the latter the result of salts causing permanent hardness. It is stated that one quarter of



an inch of incrustation—which is a bad conductor of heat—produces waste of coal to the extent of 45 per cent. It has been calculated that 1 grain of chalk wastes 8 grains of soap, and hence arises the difficulty for washing purposes of the hard water such as is drawn from the deep chalk formations. Owing to the hardness much soap is needed for lathering. Occasionally when water is drawn into a vessel from the service pipe of the Water Company's mains it appears to be “milky” or even “chalky.” If the vessel or glass receptacle be allowed to stand, it will be found that the water gradually clears from below upwards, which proves that the cloudiness is due to air. This condition is brought about by the water having been supersaturated during the process of pumping into the mains from the Waterworks. This state of the water need cause no anxiety on the part of the consumers.

HARDNESS.—In all the Annual Reports of the Medical Officer of Health prominent notice has been taken of this question. Again this year it is strongly commented upon, and will be in future Reports until some remedy is obtained.

It is probably productive of many minor ailments which in their cumulative effect may become serious.

There is every reason for regret, that, in a matter so important for the well-being of the inhabitants of the District, there is no appeal to the Local Government Board or other superior authority. This opinion of the Medical Officer of Health is endorsed by the County Medical Officer in his Report for 1902 as follows:—“The hard water could and should be “softened, if necessary, by appeal to the Local Government “Board.”

An immense benefit would be conferred on the community by the Rickmansworth and Uxbridge Valley Water Company if they could see their way to mitigating the hardness of the

water by some softening process, as is done in other parts of the country; it would add greatly to the popularity of the supply, which is very pure, apart from its hardness. The present time seems opportune for the Rickmansworth Urban District and neighbouring districts to combine, and with the help of the residents in the neighbourhood, to agitate for some process to be adopted whereby the great hardness of the Company's water could be lessened.

Surely some such simple system as that based on the principles of the "Porter-Clark" process might be inaugurated by the Rickmansworth and Uxbridge Valley Water Company whereby the water could be softened. If this course were adopted it is certain that it would lead to an increased consumption of the water, which many people at the present time refuse to use owing to its hardness.

According to the Sixth Report of the River Pollution Commissioners, this water comes under the tenth and last classification of waters as to their softness.

**DRAINAGE.**—This has still been dealt with by the following means: Cesspools, Privy-Cesspits, Pail Closets and Earth Closets.

In the new houses for the most part the drainage is dealt with by means of water carriage to a cesspool, but the greater number of houses in the District are provided with pail closets, Privy-Cesspits or Earth Closets, which are emptied by the Contractor to the Urban Council weekly, or oftener if necessary.

The slop water mainly flows into the surface drains or Town Ditch, but in a few cases it is thrown on the gardens and dug in. During the coming year this state of affairs will be altered.

THE RICKMANSWORTH SEWERAGE AND SEWAGE DISPOSAL WORKS.—The above works, which include the drainage of the whole of the localities of Rickmansworth, Croxley Green and Mill End were commenced on November the thirteenth, 1901, and completed on December the thirty-first, 1903. They comprise cast iron sewers where the depth necessitated their being laid below the level of the subsoil water, and stoneware sewers above that level. The whole of these sewers, with the exception of those in the low-lying District of Mill End, empty by gravitation into the underground storage tank at Batchworth. For dealing with this low-lying part of the District, a small pumping station is provided at Mill End for lifting the sewage into the Batchworth main outfall sewer. From Batchworth the sewage is pumped on to high land near Woodcocks Hill, and dealt with by being passed through septic tanks on to 18 acres of suitable land. There is also provided a system of water mains with flush chambers, valves, and hydrants, for flushing the sewers and watering the streets. The capacity of the large tank at Batchworth is 50,000 gallons, and it is capable of holding the night sewage when the whole of the District is connected. The engine house is on the top of the tank, being carried over the same by blue brick and concrete arches. The pumping machinery consists of duplicate sets of three-throw plunger pumps, each capable of lifting 15,000 gallons per hour, and each driven by 22 brake horse power gas engines. An independent pump and engine is provided for pumping the flush water, and each of the two sets of pumping machinery are entirely independent of the other, so that in case of accident, or during repairs to one set, the other can do the work.

The Engineer having understood that the whole of the Scheme had been completed by the Contractors had arranged to meet the Council on December 31st, 1903, in order to hand over the works. Unfortunately on the day the Council met the



Engineer, it was found that the floor of one of the Septic Tanks on the Sewage Farm had given way during the previous night, rendering that part of the tank useless. Prior to this water had been pumped on to the Farm and subsidences had occurred in the land near the tanks some three or four feet deep, the holes being of irregular shape and from three to eight feet in diameter, and upon examination it was found that a similar subsidence had taken place under the floor of the tank referred to.

As the Council were anxious not to delay the making of connections with the sewers, it was decided that the Surveyor should undertake the repair of the tank, and connections will no doubt be made as early as possible.

On referring to the Annual Report of the Medical Officer of Health for Ware, the importance of having the flush mains for the sewers independent of the water mains for the supply of drinking water is brought out. He states "the Surveyor has "been able to demonstrate how under certain conditions sewer "gas and even sewage might drain into the water main."

SCAVENGING.—This department is carried out (as in the case of the "night-soil") under contract. The Medical Officer of Health recommends that covers be provided for all the Dust Carts, the unwholesome contents of which are often distributed broadcast on a windy day.

NUISANCES (see Tables V. & VI.)—The Council might with advantage deal generally with the condition of the Urinals attached to many of the Public-houses. The accommodation seems to be inadequate in some instances; further, the flushing arrangements and general supervision should be improved. The position of the Urinals in a certain number of the Public-houses should be considered. No doubt in the future more



serious attention will be given to these "conveniences," since there will be no difficulty in arranging for their drainage into the new system of sewers.

The practice of keeping fowls in runs at the backs of the smaller houses is undesirable, especially as the space is limited, and the runs are often not covered. This state of affairs makes them unwholesome, particularly in wet weather.

Before leaving this question of Nuisances the locality of Mill End must be referred to. The inhabitants of the locality have certainly in the opinion of the Medical Officer of Health reason for complaint. Black smoke is poured out upon them almost daily (Sundays at times included) from two chimneys in their immediate neighbourhood. One chimney is that of the Mill End Mill, the other belongs to the Drayton Ford pumping-station of the Rickmansworth and Uxbridge Valley Water Company. The latter is the greater offender. The Medical Officer of Health would urge the Urban District Council to consider seriously the question of Smoke Abatement in Mill End.

HOUSING OF THE WORKING CLASSES.—As was pointed out in the last Annual Report, there is still a great need for cottage accommodation in and around the district, the supply being unequal to the demand. To a large extent this is due to the fact that landowners in the neighbourhood will not sell land for this purpose, except in positions which cannot be considered from a health point of view as conducive to the well-being of the future inmates. In due course one of the serious problems to be worked out by the Rickmansworth District Council, in common with many other Local Authorities, is the "Housing of the Working Classes." The Public and Parliament at the present time are still giving serious attention to the matter.

ROADS AND STREETS.—There is but little to be said under this heading at the present time; the thoroughfares, in consequence of the excavations for sewer trenches, are in an unsatisfactory state. It is to be hoped that after the Sewerage is completed considerable improvement will take place in the condition of the roads throughout the District. Norfolk Road still requires proper paving for foot-passengers, and the condition of Wharf Lane is far from satisfactory. Church Lane, Mill End, bears the impress of the heavy carting which takes place in that locality.

Until the connections with the sewers are made little can be expected in the way of improvement in the shape of paving and road-making; this remark applies more particularly to the former.

HOUSES UNFIT FOR HUMAN HABITATION.—The closing order obtained last year in reference to the Cottages known as Marble Arch still remains in force. Up to the present time nothing has been done by the owner to improve the property. Attention was drawn in last year's Report to the row of Cottages known as Two Stones, also to those known as White's Row, which were found insanitary on inspection. The owner carried out some alterations. The condition of these cottages is still by no means satisfactory as evidenced by a visit paid to them during the month of April owing to a case of Diphtheria being notified. The cottages are very damp, and one of the privy middens was found full and overflowing. This privy-midden difficulty can now be easily overcome by connecting proper drains to the main sewer. The site of the Cottages at Mill End, referred to in last year's Report as unfit for human habitation, is now occupied by the pumping-station in connection with the new Sewerage Scheme.

DAIRIES, COWSHEDS, MILK SHOPS AND BAKEHOUSES.—These have been regularly inspected. In the future the Council will no doubt be in a better position to improve the conditions under which these articles of food are stored and purveyed.

The position of Dairies just outside the Urban area is somewhat anomalous. Most of these Dairies depend for their support almost entirely upon residents in the Urban District and have but few customers in the Rural District. However, the Urban Council has no right of supervision over these Dairies, but must rely upon the Rural Authority for their supervision. In case, however, it can be shewn that a person is suffering from an infectious disease attributed to milk supplied from a dairy outside the District, an order for inspection may be obtained from a magistrate acting for the District in which the dairy is situate, but this is after the mischief has happened. It would seem that there should be something in the nature of a concurrent right of inspection in cases of this character, so as to ensure that the requirements of the Dairies, Cowsheds and Milkshops Orders are being complied with.

Whilst considering this subject it is highly desirable to draw the attention of Health Authorities to the importance of seeing that the milk sold to the Public is reasonably clean; there can be no doubt that a great deal of milk is consumed which is not so. In many country cowsheds there is great carelessness in all matters which relate to the collecting, storing and distributing of milk. It behoves all Sanitary Authorities to insist upon the Model Regulations in force being strictly carried out. In concluding these short observations on the matter, it should be stated that there is a general feeling that the addition of drugs to milk for the purpose of preserving it, is unnecessary and dangerous to health.



SLAUGHTER HOUSES.—Improvements have been made in dealing with the offal. In consideration of the immense and increasing importance of the question of Consumption and the frequency with which the germs of this disease are found in meat, the value of Public Slaughter-houses being provided in every district must again be prominently brought forward. It is only by constant and thorough inspection of carcasses after slaughtering that the general public can be protected against having to consume, in many instances, meat thus diseased. It is evident that such supervision cannot be effectively carried out unless the numerous Slaughter-houses in a District are merged into one Public Abattoir.

The Rickmansworth Urban District Council are provided with Bye-laws for the regulation of Slaughter-houses, and those interested in the matter can inform themselves thoroughly as to the requirements of the Council.

The drainage for the most part is of a temporary character. Now that the Sewerage Scheme is complete this will be remedied forthwith.

UN SOUND FOOD.—On July 18th a near fore-quarter of beef was, on its arrival in the Town, reported to the Medical Officer of Health as being unsound. The sale of the meat was prohibited and steps taken to ensure its destruction.

FACTORY AND WORKSHOPS ACT, 1901.—The Factories and Workshops in the District have been regularly inspected; those mentioned in the last Report have been measured up and in no case was overcrowding discovered. A few other Workshops have to be dealt with; it is expected that the total list will be completed during next year. The largest Boot and Shoe Manufactory in the District has been closed during the current year.



During the year 1904 when most, if not all, of the Factories and Workshops will be connected with the Sewerage Scheme, opportunity will be afforded for a more detailed examination to be made, and consequent improvement as regards the sanitation of the premises.

The only Bakehouse which comes under the definition of "Underground Bakehouse" has been visited by the Medical Officer of Health and the Inspector of Nuisances. They were both of opinion that the premises in question were satisfactory.

Thirty-seven Workshops have been inspected during the year as follows:—

Bakeries	...	...	...	...	...	8
Millinery and Dressmaking Establishments						8
Builders' and Plumbers' Shops	...	...				5
Wheelwrights' and Blacksmiths' Shops	...					3
Cycle-repairing Shops	...	...	...			3
Tailoring Shops	...	...	...	...		3
Boot Manufactories	...	...	...	...		2
Miscellaneous Workshops	...	...	...			5

THE CEMETERY.—In the month of February the Medical Officer of Health, accompanied by the Inspector of Nuisances, examined and reported on the piece of land which the Joint Burial Committee proposed to purchase as an extension to the Rickmansworth Cemetery. The present Cemetery is becoming overcrowded. The point to be determined was whether any danger from a health point of view would exist in bringing the Burial Ground nearer to the dwellings at Bankside Downs. It was decided that no such danger would accrue; the purchase was therefore carried through; and a Report to this effect was sent to the Urban Council.

The Medical Officer of Health gives his hearty thanks to the Clerk, Inspector of Nuisances, Collector of Rates, the District Registrar of Births and Deaths, and the Manager of the Water Works for their kindness and courtesy in furnishing information of value in the framing of this Report.



TABLE I.

Vital Statistics of Whole District during 1903 & previous years.  
Rickmansworth Urban.

Year.	Population estimated to middle of each Year.	Births.		Total Deaths registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	Nett. Deaths at all ages belonging to the District.	
		Number.	Rate *	Under 1 year of age.		At all ages.					Number.	Rate.*
				Number.	Rate per 1,000 Births registered.	Number.	Rate.*					
1	2	3	4	5	6	7	8	9	10	11	12	13
1891.	4769†	—	—	—	—	—	—	—	—	—	—	—
Half-Year } 1893.	5780	91	31·4	12	131·8	36	12·1	—	—	—	35	12·0
1899.	5335	160	27·2	17	106·2	57	10 0	—	—	2	59	10·0
1900.	5550	171	30·8	16	93·5	51	9·1	—	—	3	54	9·7
1901.	5640	155	27·4	16	103·2	56	9·9	—	—	5	61	10·8
1902.	5983	152	25·3	16	105·2	78	13	—	—	10	83	14·6
Averages for years 93-1902	5763	162	23·4	17·1	107·9	61·7	10·8	—	—	4·4	66	11·4
1903	6155	168	27·3	19	113·1	61	9 9	—	—	10	71	11·5

† No other data available.

\* Rates calculated per 1,000 of estimated population.

Total population of all ages, 5627

Number of inhabited houses, 1181

Average number of persons per house, 4.76

At Census of 1901.

Area of District in acres (exclusive of area covered by water), 556.

Institutions outside the District receiving sick and infirm persons from the District.

Watford Union Workhouse.

Watford District Joint Isolation Hospital.

Watford District Cottage Hospital.

Hill End Asylum, St. Albans.

TABLE II.

Vital Statistics of separate Localities in 1903 & previous years.  
Rickmansworth Urban District.

Names of Localities	Rickmansworth.				Croxley Green.				Mill End.			
	Population estimated to middle of each Year	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year	Births registered.	Deaths at all Ages.	Deaths under 1 year.
1893 } Half-Year.	3145	49	16	4	1850	34	15	6	785	8	4	2
1899.	3200	76	33	8	1895	56	20	6	790	28	6	3
1900.	3000	87	30	8	1750	56	16	4	800	23	8	4
1901.	3040	82	36	10	1790	46	17	3	810	27	8	3
1902.	3204	82	39	6	1834	43	25	5	950	27	14	5
Averages of Years 1893 to 1902.	3117	83.5	31.2	8	1824	52.2	20.6	5.3	827	26.2	8.9	3.8
1903	3230	87	36	8	1975	58	20	6	950	23	15	5

TABLE III.  
 Cases of Infectious Disease notified during the Year 1903.  
 Rickmansworth Urban District.

Notifiable Disease.	Cases notified in Whole District.							Total Cases notified in each Locality.			No. of Cases removed to Hospital from each Locality.		
	At all Ages	At Ages—Years.						Rickmansworth.	Croxley Green.	Mill End.	Rickmansworth.	Croxley Green.	Mill End.
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.						
Small-pox ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Chicken Pox ... ..	14	1	8	5	—	—	—	—	10	4	—	—	—
Cholera ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria ... ..	27	—	5	10	6	6	—	21	6	—	13	4	—
Membranous croup	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas ... ..	7	—	—	1	—	5	1	3	2	2	—	—	—
Scarlet fever ... ..	19	—	2	14	3	—	—	8	11	—	8	11	—
Typhus fever ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric fever ... ..	5	—	—	1	2	1	1	4	1	—	3	1	—
Relapsing fever ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued fever ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal fever ... ..	1	—	—	—	—	1	—	—	1	—	—	—	—
Plague ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ... ..	73	1	15	31	11	13	2	36	31	6	24	16	—

Isolation Hospital: Watford Joint District Isolation Hospital. Situated in the Watford Rural District.



**TABLE IV.**  
**Cause of, and Ages at Death, during Year 1903.**  
**Rickmansworth Urban District.**

Causes of Death.	Deaths in whole District at subjoined Ages.							Deaths in or belonging to Localities at all Ages.			Deaths in Public Institutions in the District.	
	All ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25	25 and under 65.	65 and upwards.	Rickmansw'rth	Croxley Green.	Mill End		
Small-pox ... ..	—	—	—	—	—	—	—	—	—	—	—	
Measles ... ..	—	—	—	—	—	—	—	—	—	—	—	
Scarlet fever ... ..	1	—	—	1	—	—	—	—	1	—	—	
Whooping-cough... ..	1	—	1	—	—	—	—	—	—	1	—	
Diphtheria and mem- branous croup ... ..	1	—	1	—	—	—	—	1	—	—	—	
Croup ... ..	—	—	—	—	—	—	—	—	—	—	—	
Fever {	Typhus ... ..	—	—	—	—	—	—	—	—	—	—	
		Enteric ... ..	2	—	—	—	1	—	1	2	—	—
		Other continued	—	—	—	—	—	—	—	—	—	—
Epidemic influenza ...	—	—	—	—	—	—	—	—	—	—	—	
Cholera ... ..	—	—	—	—	—	—	—	—	—	—	—	
Plague ... ..	—	—	—	—	—	—	—	—	—	—	—	
Diarrhœa ... ..	3	3	—	—	—	—	—	2	—	1	—	
Enteritis ... ..	3	3	—	—	—	—	—	2	—	1	—	
Puerperal fever ... ..	—	—	—	—	—	—	—	—	—	—	—	
Erysipelas ... ..	—	—	—	—	—	—	—	—	—	—	—	
Other septic diseases ...	2	1	—	1	—	—	—	1	1	—	—	
Phthisis ... ..	11	—	—	—	3	8	—	3	6	2	—	
Other tubercular diseases	2	—	1	1	—	—	—	—	—	2	—	
Cancer, malignant disease	3	—	—	—	—	3	—	2	—	1	—	
Bronchitis ... ..	2	—	—	—	—	1	1	1	1	—	—	
Pneumonia ... ..	3	3	—	—	—	—	—	2	1	—	—	
Pleurisy ... ..	1	—	—	—	—	—	1	1	—	—	—	
Other diseases of Res- piratory organs ...	1	—	1	—	—	—	—	1	—	—	—	
Alcoholism } Cirrhosis of liver }	2	—	—	—	—	2	—	2	—	—	—	
Venereal diseases... ..	2	1	—	—	—	1	—	1	1	—	—	
Premature birth ... ..	3	3	—	—	—	—	—	—	1	2	—	
Diseases and accidents of parturition ... ..	—	—	—	—	—	—	—	—	—	—	—	
Heart diseases ... ..	4	—	—	1	1	1	1	3	1	—	—	
Accidents ... ..	2	—	—	—	—	2	—	1	—	1	—	
Suicides ... ..	—	—	—	—	—	—	—	—	—	—	—	
All other causes ... ..	22	5	1	—	1	8	7	11	7	4	—	
All causes ... ..	71	19	5	4	6	26	11	36	20	15	—	

# V.

## RICKMANSWORTH URBAN DISTRICT COUNCIL.

### INSPECTOR'S REPORT.

#### Sanitary Work completed in the Year 1903.

Total No. of Complaints received...	...	...	...	107
" " Houses and premises visited	...	...	...	441
Houses cleansed and repaired	...	...	...	19
Notices served	...	...	...	52
New water closets erected	...	...	...	3
Privy or sink cesspools emptied	...	...	...	83
Privy Middens converted into pail closets	...	...	...	1
Accumulations of offensive matter removed	...	...	...	20
House Drains—Repaired, cleansed, trapped, &c.	...	...	...	60
Ventilated	...	...	...	8
Smoke-test applied	...	...	...	4
Water Supply—Samples for Analysis	...	...	...	11
Wells closed	...	...	...	7
Houses connected with water mains	...	...	...	51
Night soil and House refuse removal—Complaints received and attended to	...	...	...	8
Infectious Disease—Patients removed to Isolation Hospital	...	...	...	40
Houses inspected	...	...	...	61
Houses disinfected	...	...	...	44
Bedding, &c., removed to steam disinfectors	...	...	...	38
Schools—Visits made	...	...	...	Frequent.
Bakehouses—No. on Register	...	...	11	
Dairies and Cowsheds—No. on Register	...	...	16	
Slaughter Houses—No. on Register	...	...	8	
New Buildings—Plans passed	...	...	...	33
Canal Boats Acts, 1877 and 1884—No. of boats inspected	...	...	...	70

No. of Contraventions	{	Fore Cabin occupied, but not registered	1	}	18
		Name of Owner on Certificate not corresponding with name on boat	2		
		Absence of Certificate	2		
		Boats marked wrongly	1		
		Cabins dirty	1		
		Cabins requiring painting and repair	2		
		No proper water vessel	8		
		No pump for removal of bilge water	1		

NOTE.—1126 pail closets or privy cesspits are scavenged once or twice weekly as circumstances demand, and house refuse is removed by contract.

## VI.

## SUMMARY OF WORK.

Done through the Sanitary Inspector in the Urban Sanitary District of Rickmansworth during the year ended December 31st, 1903, as required by the Hertfordshire County Council.

	Total No. for year.	Result of Inspection, &c.
1. Complaints received ... ..	107	{ in 7 instances no nuisance existed at the time of visit.
2. Nuisances detected without complaint	77	
3. Nuisances abated ... ..	174	
4. Notices served ... ..	52	
5. Summonses taken out ... ..	—	
6. Convictions ... ..	—	
7. Cottages inspected ... ..	122	
8. Lodging-houses inspected...	—	
9. Slaughter-houses inspected ...	8	on Register {
10. Bakehouses inspected ... ..	11	
11. Dairies and Milk Shops inspected...	9	
12. Cowsheds inspected ... ..	7	
13. Workshops inspected ... ..	37	
14. Filthy houses cleansed, sec. 46 Public Health Act, 1875 ... ..	11	} Frequent Inspections
15. Houses disinfected ... ..	44	
16. Overcrowding abated ... ..	1	
17. Houses placed in habitable repair...	4	
18. Houses closed ... ..	—	
19. Houses erected or re-built for which Water "Certificates" were applied	—	
20. "Certificates" granted ... ..	—	
21. " deferred ... ..	—	
22. Wells sunk, or improved supplies of water afforded ... ..	1	
23. Wells cleansed or repaired ...	—	
24. Wells closed ... ..	7	
25. Houses connected with sewers ...	—	
26. " " with water mains	51	
27. Earth, pail or improved Privies constructed or existing Privies altered	1	
28. Privies & W.C.'s repaired; W.C.'s supplied with water ... ..	—	
29. Cisterns cleansed, repaired or covered ... ..	—	
30. Animals improperly kept ... ..	1	
31. Samples of water taken for Analysis	11	
32. Compensation paid for destruction of infected bedding ... ..	2	
33. Seizure of unsound Meat, &c. ...	1	

(Signed) ALBERT FREEMAN.

